preliminary product fact sheet 556A

14 SEER SPLIT-SYSTEM AIR CONDITIONER WITH R-410A DATA FOR PRELIMINARY USE ONLY

Cancels: New

PF 556A.24.1
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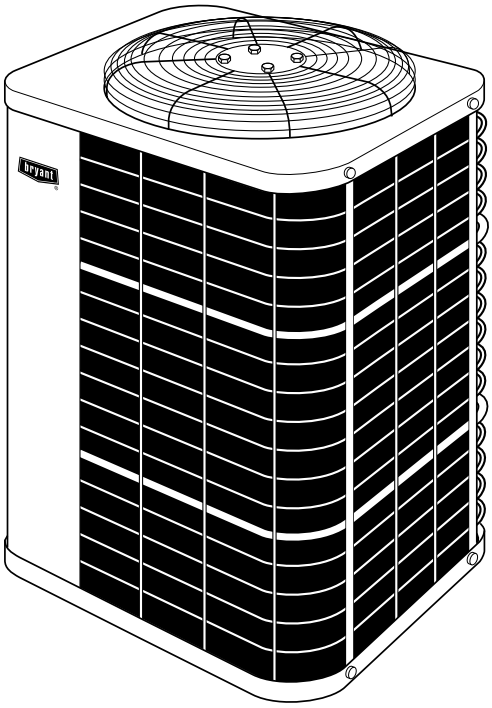

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The model 556A Air Conditioner uses the ozone-friendly refrigerant R-410A. The unit is available in nominal sizes 024 through 042. The unit features a copper tube, enhanced aluminum fin coil for a compact, low-profile appearance with vertical air discharge.

FEATURES

- SEER of at least 14.0 with specified Bryant equipment
- AeroQuiet System
- Earth-friendly refrigerant R-410A
- High-pressure switch
- Low-pressure switch
- R-410A liquid-line filter drier
- Compressor sound hood
- Compressor start assist—PTC type
- Compressor plug
- Crankcase heater
- Copper tube aluminum fin coil
- External brass back seating service valves with sweat connections
- R-410A hard shutoff TXV
- Condenser coil grille
- Electric ground lug

LIMITED WARRANTY

- 1-year parts only warranty on all parts
- Additional 9-year warranty on compressor, no labor

This product meets GREEN SEAL criteria for manufacturing, energy efficiency, sound levels and packaging. It contains no CFCs or HCFCs.

As an ENERGY STAR[SM] Partner, Bryant Heating & Cooling Systems has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

Carrier Corporation ISO 9001 #A2934

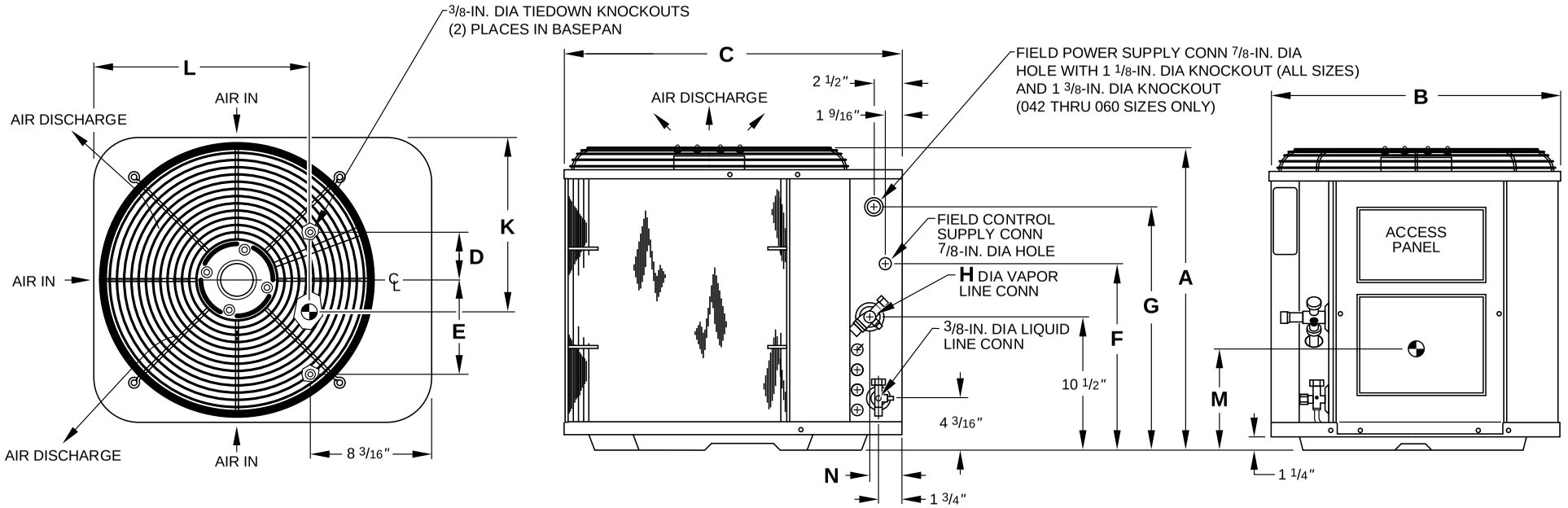
CERTIFICATE NO. FM 28768

APPROVALS
ISO 9001
EN 29001
BS 5750 PART 1
ANSI/ASQC Q91

REGISTERED QUALITY SYSTEM

NOTES:

1. Allow 30 in. clearance to service end of unit, 48 in. above unit, 6 in. on one side, 12 in. on remaining side, and 24 in. between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 55°F (unless low-ambient control is used) max 125°F.
3. Series designation is the 14th position of the unit model number.
4. Center of gravity ⊕ .



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DIMENSIONS (IN.)

UNIT SIZE	SERIES	UNIT DIMENSIONS												MINIMUM MOUNTING PAD DIMENSIONS
		A	B	C	D	E	F	G	H	K	L	M	N	
024	A	39-13/16	30	33	5-1/16	9-11/16	27-15/16	34-3/8	5/8	TBD	TBD	TBD	2-15/16	26 X 32
030	A	39-13/16	30	33	5-1/16	9-11/16	27-15/16	34-3/8	3/4	TBD	TBD	TBD	2-15/16	26 X 32
036	A	39-13/16	30	33	5-1/16	9-11/16	27-15/16	34-3/8	3/4	TBD	TBD	TBD	2-15/16	26 X 32
042	A	39-13/16	30	33	5-1/16	9-11/16	27-15/16	34-3/8	7/8	TBD	TBD	TBD	2-15/16	26 X 32

TBD—To Be Determined

TESTED COMBINATION RATINGS*

UNIT SIZE-SERIES	INDOOR MODEL	TOTAL CAPACITY BTUH	SEER				EER
			Factory-Supplied Enhance-ment	Standard Rating	Bryant Gas Furnace or Accessory TDR†	Accessory TXV‡	
024-A	CJ5A/CK5A/CK5BA036	26,600	TXV	—	14.00	—	12.00
030-A	CJ5A/CK5A/CK5BA042	30,500	TXV	—	14.10	—	12.00
036-A	CJ5A/CK5A/CK5BA048	36,500	TXV	—	14.10	—	11.90
042-A	CJ5A/CK5A/CK5BA060	42,000	TXV	—	14.00	—	11.90

* Outdoor section/indoor section combination tested in accordance with DOE test procedure for electric air conditioners.
† In most cases, only 1 method should be used to achieve TDR function. Using more than 1 method in a system may cause degradation in performance. Use either the accessory Time-Delay Relay KAATD0101TDR or a furnace equipped with TDR. All Bryant furnaces are equipped with TDR except for the 394HAD.
‡ Based on computer simulation. TXV must be R-410A compatible and hard shutoff type.
EER—Energy Efficiency Ratio
SEER—Seasonal Energy Efficiency Ratio
TDR—Time-Delay Relay
TXV—Thermostatic Expansion Valve
NOTES: 1. Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included.
2. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.
3. Do not apply with capillary tube coils as performance and reliability are significantly affected.

RECOMMENDED TUBE DIAMETERS

UNIT SIZE	LIQUID TUBE DIAMETER (IN.)		VAPOR TUBE DIAMETER (IN.)	
	0 to 50 Ft Tube Length	Long-Line Applications*	0 to 50 Ft Tube Length	Long-Line Applications* (Maximum Diameter)
024	3/8	3/8	5/8	3/4
030	3/8	3/8	3/4	7/8
036	3/8	3/8	3/4	7/8
042	3/8	3/8	7/8	1-1/8

* Tube diameters are for lengths up to 50 ft. For tubing lengths greater than 50 ft, consult the Application Guideline and Service Manual for Residential Split-System Air Conditioners and Heat Pumps Using R-410A Refrigerant.
NOTE: Refrigerant tubes and indoor coils must be evacuated to 500 microns to minimize contamination and moisture in the system.

METERING DEVICE

UNIT SIZE	INDOOR TXV*	REQUIRED SUBCOOLING (°F)
024-A	KSATX0201HSZ	TBD
030-A	KSATX0201HSZ	TBD
036-A	KSATX0301HSZ	TBD
042-A	KSATX0301HSZ	TBD

* TXV must be installed when indoor coil is not equipped with an R-410A approved TXV. TXV listed is for any approved coil combination. All TXVs are R-410A specific hard shutoff.
TBD—To Be Determined

SOUND RATING (DBA)

UNIT SIZE-SERIES	SOUND RATING
024-A	70
030-A	72
036-A	74
042-A	74

SPECIFICATIONS

UNIT SIZE-SERIES		024-A	030-A	036-A	042-A
Operating Weight (Lb)		291	291	291	291
ELECTRICAL					
Unit Volts—Hertz—Phase		208/230—60—1			
Operating Voltage Range*		187–253			
Compressor—	Rated Load Amps	13.5	14.7	15.4	18.6
	Locked Rotor Amps	61.0	72.5	83.0	105.0
Condenser Fan Motor—Full Load Amps		0.75	0.75	1.10	1.10
Minimum Unit Ampacity for Wire Sizing		TBD	TBD	TBD	TBD
Minimum Wire Size (60°C Copper) (AWG)†		TBD	TBD	TBD	TBD
Minimum Wire Size (75°C Copper) (AWG)†		TBD	TBD	TBD	TBD
Maximum Wire Length (60°C) (Ft)‡		TBD	TBD	TBD	TBD
Maximum Wire Length (75°C) (Ft)‡		TBD	TBD	TBD	TBD
Maximum Branch Circuit Fuse Size**		TBD	TBD	TBD	TBD
COMPRESSOR AND REFRIGERANT					
Compressor—	Manufacturer	Copeland			
	Type	Scroll			
Refrigerant—	Type	R-410A			
	Amount (Lb)††	9.88	10.25	10.25	10.50
OUTDOOR COIL & FAN					
Coil Face Area (Sq Ft)		18.25	18.25	18.25	18.25
Fins per In.—Rows—Circuits		20—2—4	20—2—4	20—2—4	20—2—4
Fan Motor HP and RPM		1/8 and 825	1/8 and 825	1/5 and 825	1/5 and 825
Rated Airflow (CFM)		2400	2400	2800	2800
OPTIONAL EQUIPMENT					
Support Feet—4 In. (4)		KSASF0101AAA			
Coastal Filter		KAACF0201MED			
Time-Delay Relay		KAATD0101TDR			
Cycle Protector—5-Minute Time Delay		KSACY0101AAA			
Start Assist—Capacitor/Relay Type		KSAHS1501AAA			
TXV (Hard Shutoff)		KSATX0201HSZ		KSATX0301HSZ	
Filter Drier (Suction Line)		KH45LG140 (RCD)			KH45LG141 (RCD)
Evaporator Freeze Thermostat‡‡		KAAFT0101AAA			
Liquid-Line Solenoid Valve (LSV)		KAALS0201LLS			
Winter Start Control		KAAWS0101AAA			
Low-Ambient Pressure Switch		KSALA0301410			
Low-Ambient Controller		P251-0083 (RCD)			
MotorMaster® Control***		32LT660004 (RCD)			
Ball Bearing Fan Motor		HC38GE230			
Thermostat—Auto Changeover, Non-Programmable, °F/°C, 1-Stage Heat, 1-Stage Cool		TSTATBHNAC01-A			
Thermostat—Auto Changeover, 7-Day Programmable, °F/°C, 1-Stage Heat, 1-Stage Cool		TSTATBHPAC01-A			
Thermidistat™ Control—Programmable Thermostat with Humidity Control		TSTATBHPRH01-A			
Thermostat—Manual Changeover, Non-Programmable, °F, 1-Stage Heat, 1-Stage Cool		HH07AT212			
Outdoor Air Temperature Sensor		TSTATXXSEN01			
Backplate for Non-Programmable Thermostat		TSTATXXNBP01			
Backplate for Programmable Thermostat		TSTATXXPBP01			
Thermostat Conversion Kit (4 to 5 Wire)—10 Pack		TSTATXXCNV10			

* Permissible limits of the voltage range at which unit will operate satisfactorily. Operation outside these limits may result in unit failure.
† If other than uncoated (non-plated), 60° or 75°C (140° or 167°F) insulation, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).
If wire is applied at ambient greater than 30°C (86°F), consult Table 310-16 of the NEC (ANSI/NFPA 70). The ampacity of nonmetallic-sheathed cable (NM), trade name ROMEX, shall be that of 60°C (140°F) conductors, per the NEC (ANSI/NFPA 70) Article 336-30.
‡ Length shown is as measured 1 way along the wire path between the unit and the service panel for a voltage drop not to exceed 2 percent.
** Time-delay fuse or circuit breaker.
†† The factory refrigerant charge is for 15 ft of interconnecting tubing. For tubing lengths other 15 ft, refer to the Long-Line Application Guideline and Service Manual for Residential Split-System Air Conditioners and Heat Pumps using R-410A.
‡‡ Use with low-ambient pressure switch.
*** Fan motor with ball bearings required.
TBD—To Be Determined
NOTE: Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

ACCESSORY USAGE GUIDELINE

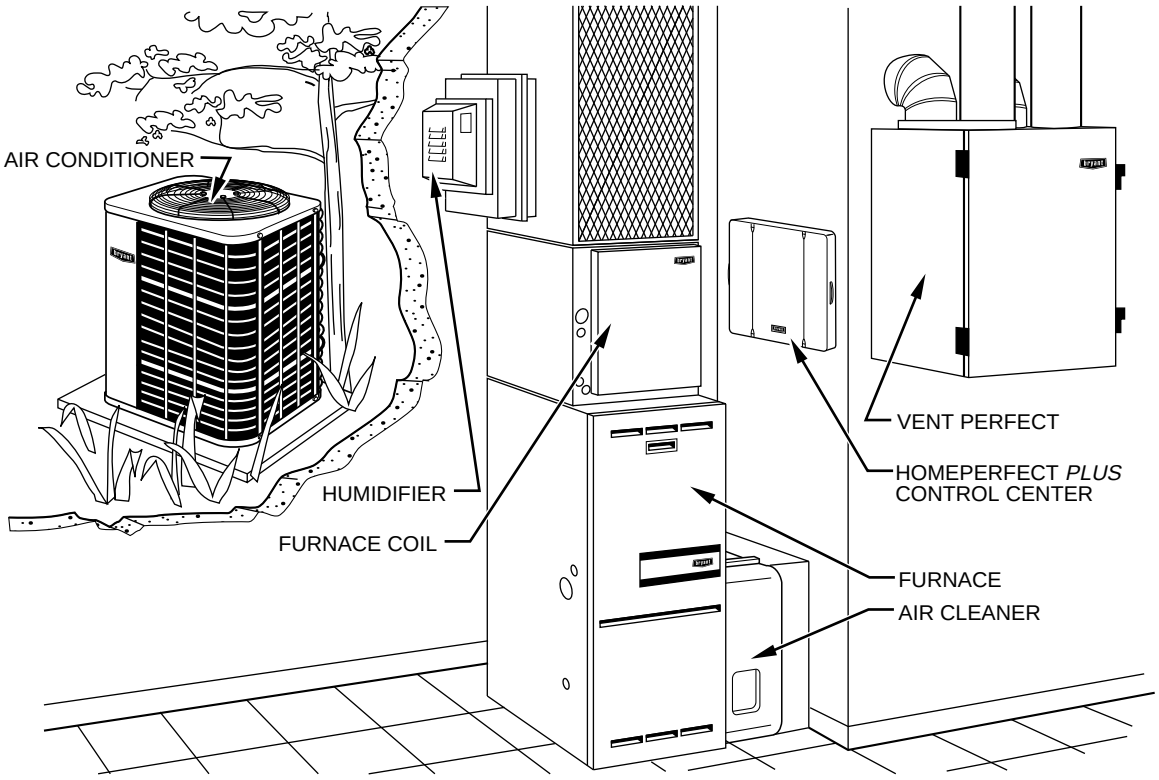
ACCESSORY	REQUIRED FOR LOW-AMBIENT APPLICATIONS (BELOW 55°F)	REQUIRED FOR LONG-LINE APPLICATIONS* (OVER 50 FT)	REQUIRED FOR BURIED LINE APPLICATIONS† (OVER 3 FT)	REQUIRED FOR SEA COAST APPLICATIONS (WITHIN 2 MILES)
Crankcase Heater	Yes	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No	No
Winter Start Control	Yes‡	No	No	No
Accumulator	No	No	Yes	No
Compressor Start Assist Capacitor and Relay	Yes	Yes	Yes	No
Low-Ambient Controller, MotorMaster® Control, or Low-Ambient Pressure Switch	Yes	No	No	No
Wind Baffle	See Low-Ambient Instructions	No	No	No
Coastal Filter	No	No	No	Yes
Support Feet	Recommended	No	No	Recommended
Liquid-Line Solenoid Valve or Hard Shutoff TXV	No	See Long-Line Application Guideline	Yes	No
Ball Bearing Fan Motor	Yes**	No	No	No

* For tubing line sets between 50 and 175 ft, refer to the Application Guideline and Service Manual for Residential Split-System Air Conditioners and Heat Pumps using R-410A Refrigerant.
† For buried line applications, refer to Residential Split System Buried-Line Application Guideline.
‡ Only when low-pressure switch is used.
** Required for Low-Ambient Controller (full modulation feature) and MotorMaster® Control only.

R-410A—QUICK REFERENCE GUIDE

- R-410A refrigerant operates at 50-70 percent higher pressures than R-22. Be sure that servicing equipment and replacement components are designed to operate with R-410A.
- R-410A refrigerant cylinders are rose colored.
- R-410A refrigerant cylinders have a dip tube which allows liquid to flow out of cylinder in upright position.
- Recovery cylinder service pressure rating must be 400 psig, DOT 4BA400 or DOT BW400.
- R-410A systems should be charged with liquid refrigerant. Use a commercial type metering device in the manifold hose.
- Manifold sets should be 700 psig high side and 180 psig low side with 550 psig low-side retard.
- Use hoses with 700 psig service pressure rating.
- Leak detectors should be designed to detect HFC refrigerant.
- R-410A, as with other HFCs, is only compatible with POE oils.
- Vacuum pumps will not remove moisture from oil.
- Do not use liquid-line filter driers with rated working pressures less than 600 psig.
- Do not install a suction-line filter drier in liquid line.
- POE oils absorb moisture rapidly. Do not expose oil to atmosphere.
- POE oils may cause damage to certain plastics and roofing materials.
- Wrap all filter driers and service valves with wet cloth when brazing.
- A liquid-line filter drier is required on every unit.
- Do not use an R-22 TXV.
- If indoor unit is equipped with an R-22 TXV, it must be changed to an R-410A TXV.
- Never open system to atmosphere while it is under a vacuum.
- When system must be opened for service, break vacuum with dry nitrogen prior to opening to atmosphere.
- Always replace filter drier after opening system for service.
- Do not vent R-410A into the atmosphere.
- Do not use capillary tube coils.
- Observe all **warnings**, **cautions**, and **bold** text.

MATCHED SYSTEM



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SYSTEM DESIGN

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C)
4. For reliable operation, unit should be level in all horizontal planes.
5. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 30 ft; indoor coil below = 30 ft. (See items 6 and 7 following.)
6. For interconnecting tubing lengths greater than 50 ft, consult the Residential Split-System Application Guideline and Service Manual for Air Conditioners and Heat Pumps using R-410A Refrigerant.
7. If ANY refrigerant tubing is buried, provide a minimum 6-in. vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. may be buried without further considerations. For buried refrigerant tubing lengths greater than 36 in., consult the Residential Split-System Buried-Line Application Guideline.
8. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
9. Mixmatches of indoor coil capacity of more than 2 sizes larger than outdoor unit capacity may result in inadequate indoor comfort.
10. Do not apply capillary tube indoor coils to these units.
11. Factory-supplied filter drier must be installed.

SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

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